

10/007,747

Human N-Methyl-D-Aspartate Receptor Subunits,
Nucleic Acids Encoding Same and Uses Therefor

This application is a continuation-in-part of a ^{div. of} ^{which is} ^{div. of} ^{Aug. 28, 2000,} ^{08/231,193} ^{filed Apr 20, 1999,} ^{which is a} ⁹⁻⁸⁻⁰⁴ United States Serial No. 08/052,449, filed April 20, 1993, ^{div. of 09/648,797 file} now pending.

The present invention relates to nucleic acids
5 and receptor proteins encoded thereby. Invention nucleic
acids encode novel human N-methyl-D-aspartate (NMDA)
receptor subunits. The invention also relates to methods
for making such receptor subunits and for using the
receptor proteins in assays designed to identify and
10 characterize compounds which affect the function of such
receptors, e.g., agonists and antagonists of NMDA
receptors.

BACKGROUND OF THE INVENTION

The amino acid L-glutamate is a major excitatory
15 neurotransmitter in the mammalian central nervous system.
Anatomical, biochemical and electrophysiological analyses
suggest that glutamatergic systems are involved in a broad
array of neuronal processes, including fast excitatory
synaptic transmission, regulation of neurotransmitter
20 releases, long-term potentiation, learning and memory,
developmental synaptic plasticity, hypoxic-ischemic damage
and neuronal cell death, epileptiform seizures, as well as
the pathogenesis of several neurodegenerative disorders.
See generally, Monaghan et al., Ann. Rev. Pharmacol.
25 Toxicol. 29:365-402 (1980). This extensive repertoire of
functions, especially those related to learning,
neurotoxicity and neuropathology, has stimulated recent
attempts to describe and define the mechanisms through
which glutamate exerts its effects.

30 Currently, glutamate receptor classification
schemes are based on pharmacological criteria. Glutamate